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(58) Documents Cited

EP 0762751 A2 EP 0760568 A1 WO 96/37996 A1
WO 93/07713 A1 WO 93/01685 A1 US 5404393 A

(58) Field of Search

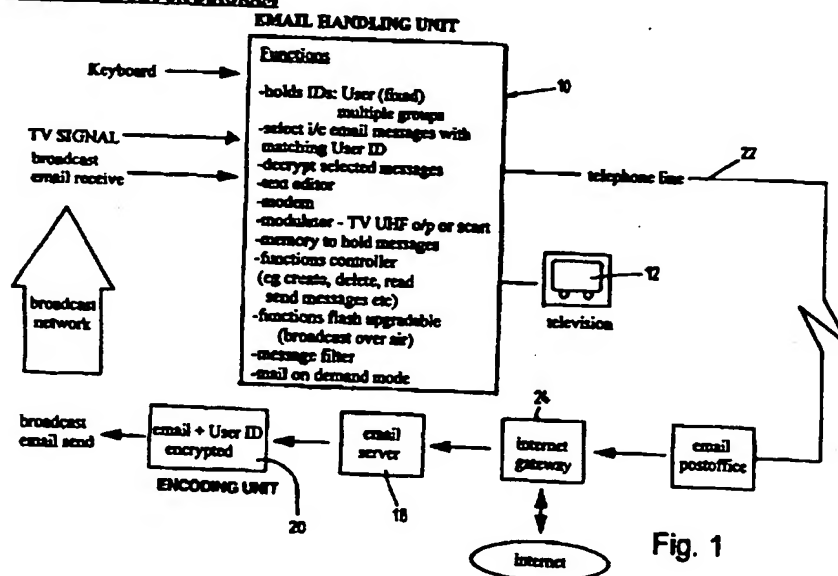
UK CL (Edition P) H4F FAAX FBA FBB FDX
INT CL⁶ H04M 11/08, H04N 1/00 5/445 5/45 7/00
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(54) Abstract Title

Displaying E-mail messages on a television screen

(57) Apparatus for receiving, for example, E-mail messages and displaying the messages on a television screen. A message is received, for example, via the television aerial, and passed to the apparatus which includes an E-mail Handling Unit (EHU) 10. The EHU identifies the user ID included in the message and compares the ID with ID's stored in its memory. If the user ID matches one of the stored ID's, the message is decrypted and stored. A marker is laid over the television screen 12 to indicate to the user that a message is waiting to be read. The user can then select to read the message by displaying it on the television screen.

FUNCTIONAL BLOCK DIAGRAM



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

Electronic Communication

This invention relates to electronic communication and, in particular, to handling electronic communication, for example, E-mail.

Electronic communication is becoming increasingly popular and widespread, with many people being connected to the internet and having access to, for example, E-mail via personal computers in their homes or places of work.

E-mail is a form of electronic message communication which is transmitted and received via telephone lines. The computer is provided with a modem which enables the user to be connected to a local server, through which other E-mail users can be accessed. A message is typed into the personal computer and is then transmitted via the telephone connection to the intended recipient's computer. The intended recipient is recognised by the server by means of the recipients E-mail address".

When the message has been transmitted, it is stored in the recipient's server until it is accessed by the recipient, at which time an indication that a new message has been sent may be displayed. The recipient can then retrieve and display the message.

However, there are a number of disadvantages associated with this type of communication. Firstly, in order to ascertain whether or not a new message has been sent, the user must switch on his personal computer. Thus, it is necessary for the computer to be switched on and checked at regular intervals otherwise urgent messages may not be received for some time. Each time, the computer has to be switched on and the correct file must be opened before messages can be retrieved, and this can take a considerable amount of time in some cases.

Another disadvantage of this form of communication is that, at present, in order to have access to E-mail, it is necessary to have access to a personal computer. The cost of a personal computer may far outweigh the benefits of E-mail if that is the only purpose for which it is required.

The present invention is intended to overcome the problems outlined above, and provide a versatile and flexible arrangement which is easy to use and will make electronic communication much more accessible to many more people.

In accordance with a first aspect of the present invention, there is provided apparatus for use with a television to receive a communication other than a television signal and display at least a portion of the communication on a television screen, the apparatus comprising display means for displaying at least a portion of said communication on a television screen and receiver means for receiving the communication from at least one medium which carries a television input signal, wherein the only television input signals are a television signal and a power supply.

In accordance with a second aspect of the present invention, there is provided apparatus for receiving a communication other than a television signal and displaying at least a portion of said communication on a television screen, the apparatus comprising receiver means for receiving a communication and display means for displaying at least a portion of said communication on a television screen, wherein the receiving means can receive both the communication and the television signal simultaneously.

It is preferable, if the display means comprises means for displaying at least a portion of said communication on a television screen simultaneously with a television signal.

Therefore, in accordance with a third aspect of the present invention, there is provided apparatus for receiving a communication other than a television signal and displaying at least a portion of said communication on a television screen, the apparatus comprising receiver means for receiving a communication and display means for displaying at least a portion of said communication on a television screen simultaneously with a television signal.

The communication may comprise an identification code so as to identify the recipient. Therefore, the apparatus of the above aspects of the present invention preferably comprise identification means for reading said identification code and determining whether said communication is to be displayed. The identification code may either be a code which is set in the apparatus itself, e.g. similar to an IP address or, it may be a code entered by the recipient themselves e.g. an E-mail address.

In accordance with a fourth aspect of the present invention, there is provided apparatus for receiving information and displaying at least a portion of said information on a television screen, said apparatus comprising receiver means for receiving a television signal, means for receiving a datastream other than a television broadcast, said datastream including said information, and display means for displaying said at least a portion of said information on a television screen.

In accordance with a fifth aspect of the present invention, there is provided apparatus for receiving information and displaying said information on a television screen, the apparatus comprising receiver means for receiving a datastream including said information, memory means for storing said information, conversion means for converting said datastream to a data format capable of being displayed on a television screen, and display means for displaying said information on a television screen.

In accordance with all aspects of the present invention, the datastream or the communication is preferably E-mail.

The datastream or electronic communication is preferably broadcast from a location remote from said apparatus. Preferably, the broadcast is via a broadcast network such as radio, satellite network, cellular network, cable network, pager network, analogue or digital TV network, or the datastream or electronic communication may be supplied via the electricity supply distribution network.

With reference to all aspects of the present invention, the datastream or electronic communication may be transmitted in the same format as an analog or digital television signal. Alternatively, the receiver means may include means for receiving a datastream or electronic communication in the form of a signal which is transmitted via cable or satellite. Thus, the datastream or electronic communication may be an analog or digital signal.

The display means may display the information or communication substantially immediately it is received. Alternatively, the apparatus may comprise control means for displaying or deleting said information or communication, as required by the user. It is preferable if the present invention comprises switching means for switching off said display means while keeping the receiving means switched on. Therefore, if required, communications can be received which do not impinge on television viewing.

The display means may be arranged to display only a portion of the information or communication on the television screen, that portion including an identification of the intended recipient of the information or communication, and/or the sender of the information or communication and/or a reference indicating the subject of the information or communication. The apparatus may comprise user selection means for enabling the user to select the manner in which the information or communication is displayed.

The apparatus may also comprise means for storing user identification information, and preferably includes matching means for receiving user identification information and matching received user identification information with the stored identification information to identify the intended recipient of the information or communication and to identify its sender.

Another aspect of the present invention provides a television including apparatus as described above.

The television may comprise an input to which the apparatus is connected and may also comprise an output connected to a communication line for transmitting a datastream or electronic communication.

The apparatus preferably comprises means for creating information or a message and means for transmitting said information or message to said communication line.

With reference to all aspects of the present invention, the apparatus may comprise means for connecting to the internet. For example, the apparatus may comprise an input port and/or an output port connected to the internet. Also, there are plans to provide internet to all homes via the electricity supply. Thus, particularly in this case, the apparatus may comprise means for checking the internet periodically for information or communications intended for the user. The apparatus may also comprise means for periodically checking a mail server which is independent from the internet. In both cases, the display means being arranged to display said information or communications or a portion of said communication or information, or to display an indication to the user that information or a communication is being stored.

In all cases the information or communication is preferably displayed on the television screen as text.

Embodiments of the present invention will now be described by way of example only, and with reference to the accompanying drawings, in which:

Figure 1 is a schematic block diagram of a system including a first embodiment of the present invention;

Figure 2 is a schematic block diagram showing a mode of operation of an embodiment of the apparatus of the present invention;

Figure 3 is a schematic front view of a television screen showing an example of the manner in which messages received by the apparatus of the present invention may be displayed;

Figure 4 is a block diagram showing the structure of data stored in an embodiment of apparatus of the present invention; and

Figure 5 is a schematic block diagram of a system including a second embodiment of the present invention.

The present invention aims to provide a system which enables a user to handle E-mail or the like using a standard television set, with benefits including the use of E-mail without the need for a personal computer, and also unique and effective target marketing opportunities.

Referring to Figure 1 of the drawings, apparatus according to an embodiment of the present invention comprises an E-mail Handling Unit (EHU) 10, which is a hardware unit containing software and firmware which interfaces with a user's television and television aerial. The EHU may include one or more of the following features:

- memory means for storing fixed user identification codes and group identification codes;

- means for selecting for display only stored messages which carry a particular user identification code;

- decryption means for decrypting only selected stored messages;

- a text editor, for use when a message is required to be sent out;

modem for providing an interface between the apparatus and the communication line;

modulator, e.g. TV, UHF output or scart;

memory means for storing messages;

a functions controller for enabling the user to create, read delete, send, etc.

messages;

functions of the EHU are flash upgradeable to enable EHU software modifications to be received by broadcast.

message filter, to filter out messages having particular attributes;

means for selecting a mode whereby messages are only displayed on demand or a mode whereby messages are displayed substantially as they are received;

header mode; in cases of restricted broadcast bandwidth, only the E-mail header and/or subject line may be received by the EHU. The full message may then be accessed by other means;

conversion means - to convert if required text to audio speech and vice versa, speech to control functions or convert input from a braille keypad.

The EHU enables a user to handle E-mail messages, although in one of the simplest embodiments of the present invention in which E-mail messages can only be received, the apparatus may be arranged such that no user intervention is required to receive E-mail. The messages may simply be displayed on the television screen while it is on (perhaps for a predetermined period of time) before being automatically deleted.

The operation of a more complicated embodiment of the apparatus in various modes will now be described.

In use, when the EHU 10 is operated, a 'noticeboard' is displayed on the television screen 12. The television may be any standard domestic television, whether digital or analog. In a preferred embodiment, when the EHU is operated (or, alternatively, when the television is switched on), the 'noticeboard' will consist of all new messages 14 (as well as the sender and, optionally, the intended recipient of the messages), and a control information menu 16 (see Figure 3). Referring to Figure 3 of the drawings, in the present embodiment, the "messages" displayed may simply comprise a reference indicating the subject matter of the whole message, the sender

identification, the date of sending a "new mail" indicator showing whether or not a message has been read but not yet deleted.

The 'noticeboard' may be a full screen which appears as soon as E-mail has been received by the EHU, or it may initially simply comprise a small marker which is laid over the television picture so as to indicate that there is E-mail waiting to be read by the user. The user can then call the full screen 'noticeboard' up at any convenient time.

Options provided by the 'noticeboard' or menu may be selected using keys on a standard or specially adapted infra-red remote control, or even keys provided on the television set itself. Alternatively, a standard computer keyboard could be plugged in to the apparatus.

Receiving a message

Referring back to Figure 1 of the drawings messages for a user may originate anywhere on the E-mail network or internet. When a message is received by the server 18 being used by the user's system, it is passed to an encoding unit 20 where the message is encrypted together with one or more destination user identification codes which essentially indicate who the message is intended for. This may be a single person or a group of people or organisations being targeted for advertising purposes. The message is then broadcast over a network once, or more times to make the system more resilient.

The message is received by the user's EHU 10 via the television aerial (if the message data is in the form of a television signal), or other type of aerial or cable suitable for use with particular broadcast network being used. The EHU decrypts messages intended for the user alone. The message may be intended for a particular group of people (perhaps as part of a target market advertising campaign). In this case, the encoding unit will also encrypt the message with a "Group ID", e.g "TV Advertising". The user can be given the choice as to whether or not he wishes to receive messages carrying this Group ID (see Figure 4), although some Group ID's may be able to override such a command if necessary.

Messages which are received by a user's EHU, but which are not intended for that user (i.e. the messages which do not carry the users E-mail address(es) and/or a

user ID which matches the internal user ID held in the EHU) are rejected, although it is envisaged that some Group ID's may be able to override the user ID matching process such that all users within a particular group will receive some types of broadcasts (see Figure 2).

In a very simple embodiment of the present invention, once a message has been received, it is modulated by the modulator in the EHU 10, and the apparatus may be arranged to substantially immediately display the message on the television screen, perhaps for a predetermined period of time, and then delete it. However, in a preferred embodiment, a small marker is laid over the television screen to indicate that a message is waiting to be read by the user. The user can then call up on the television screen the 'noticeboard' or menu shown in Figure 3 and read the message in his own time. In this case, the user can use the EHU to delete messages as necessary.

Sending a message

The user can create a message by calling up on the television screen the 'noticeboard' or menu shown in Figure 3 of the drawings and selecting the "create new message" option. The EHU 10 includes a text editor for this purpose. When the message has been created, the user instructs the apparatus to send the message to a particular destination or destinations. In response to this, the EHU 10 dials the E-mail post office and is connected thereto via the telephone line 22 and/or other network, e.g. ISDN. Telephone line 22 is connected to the EHU either directly or via the television. Any conventional telephone network can be used or other means of connection e.g. messaging over the domestic electricity supply.

If the message is destined for a user operating a EHU then the message and the destination ID is again encrypted by the encoding unit, before being broadcast over a network one or more times (see Figure 1).

The memory in the EHU 10 which stores received messages may include means for warning the user when the memory is almost full. The user can then delete some or all of the stored messages accordingly. Alternatively, or additionally, the memory may include a function whereby the oldest messages are deleted automatically, either in response to a warning that the memory is almost full or when the messages have been stored for a predetermined period of time.

If the broadcast bandwidth of the system is low, the apparatus may be arranged to display on the television screen only header and subject information relating to incoming messages. The user can then retrieve the whole message from his E-mail post-box, which is an area on the post office server which is reserved for a particular subscriber.

As shown in Figure 1, the internet may also be accessible via a standard television set using the apparatus of the present invention. This is achieved by providing a gateway 24 from the post office server to the internet, as shown. Alternatively, it is envisaged that the apparatus of the present invention could be connected directly to the internet. A particular example of this is shown in Figure 5. It is soon envisaged that the internet could be soon supplied to a vast majority of the population via the electricity supply.

In Figure 5, the EHU (10) is connected on one side to the television (12) and on the other to the E-mail post office via the domestic electricity supplies message network.

Therefore, E-mail can be both received and transmitted using the same television connection.

Inputting commands to and receiving information from the internet will be performed in a similar manner to the manner of sending and receiving messages described above. Of course, the menu displayed on the television screen will have to include more commands and options, and the memory in the EHU 10 may have to have a greater capacity to deal with the volume of information which may be involved. However, the principle is the same. The EHU may be provided with means for periodically checking the internet for messages carrying the user's personal or group ID.

The apparatus of the present invention may comprise a separate unit which can be connected to a television, or the apparatus may be incorporated within a television set during manufacture.

In the light of this disclosure, modifications of the described embodiment, as well as other embodiments, all within the scope of the present invention as defined by the appended claims, will now become apparent to persons skilled in the art.

CLAIMS:

1. Apparatus for use with a television to receive a communication other than a television signal and display at least a portion of the communication on a television screen, the apparatus comprising display means for displaying at least a portion of said communication on a television screen and receiver means for receiving the communication from at least one medium which carries a television input signal, wherein the only television input signals are a television signal and a power supply.
2. Apparatus for receiving a communication other than a television signal and displaying at least a portion of said communication on a television screen, the apparatus comprising receiver means for receiving a communication and display means for displaying at least a portion of said communication on a television screen, wherein the receiving means is capable of receiving both the communication and the television signal simultaneously.
3. Apparatus as claimed in either of claims 1 or 2, wherein the display means comprises means for displaying at least a portion of said communication on a television screen simultaneously with a television signal.
4. Apparatus for receiving a communication other than a television signal and displaying at least a portion of said communication on a television screen, the apparatus comprising receiver means for receiving a communication and display means for displaying at least a portion of said communication on a television screen simultaneously with said television signal.
5. Apparatus as claimed in any of claims 1 to 4, wherein the receiving means comprises means to simultaneously receive both the communication and the television signal.

6. Apparatus as claimed in any of claims 1 to 5, wherein the communication comprises an identification code, the apparatus further comprising identification means for reading said identification code and determining whether said communication is to be displayed.
7. Apparatus for receiving information and displaying at least a portion of said information on a television screen, said apparatus comprising receiver means for receiving a television signal, means for receiving a datastream other than a television broadcast, said datastream including said information, and display means for displaying said at least a portion of said information on a television screen.
8. Apparatus for receiving information and displaying said information on a television screen, the apparatus comprising receiver means for receiving a datastream including said information, memory means for storing said information, conversion means for converting said datastream to a data format capable of being displayed on a television screen, and display means for displaying said information on a television screen.
9. Apparatus as claimed in either of claims 7 or 8, wherein the datastream is an electronic communication.
10. Apparatus as claimed in any of claims 1 to 6 or claim 9, wherein the communication comprises E-mail.
11. Apparatus as claimed in any of claims 1 to 6 or claims 9 or 10, further comprising memory means for storing said received information.
12. Apparatus as claimed in any preceding claim, wherein said receiver means includes means for receiving a datastream or communication in the form of a signal which is broadcast from a location remote from said apparatus.

13. Apparatus as claimed in any preceding claim, including means for receiving a datastream or communication in the form of a signal which is transmitted via cable or satellite.
14. Apparatus as claimed in any preceding claim wherein said datastream or said communication is an analog signal.
15. Apparatus as claimed in any one of claims 1 to 13, wherein said datastream or said communication is a digital signal.
16. Apparatus as claimed in any preceding claim, wherein said display means displays said information or communication substantially immediately it is received.
17. Apparatus as claimed in any one of claims 1 to 15, comprising control means for displaying or deleting said information or communication, as required by the user.
18. Apparatus as claimed in either of claims 16 or 17, wherein said display means displays only a portion of said information or communication on said television screen, said portion including an identification of the intended recipient of the information or communication, and/or the sender of said information or communication and/or a reference indicating the subject of said information or communication.
19. Apparatus as claimed in any preceding claim, wherein said apparatus is provided with switching means for switching off said display means while said receiving means are kept switched on.
20. Apparatus as claimed in any preceding claim, comprising user selection means for enabling the user to select the manner in which the information or communication is displayed.

21. Apparatus as claimed in any preceding claim, further comprising means for storing user identification information.
22. Apparatus as claimed in claim 19, including matching means for receiving user identification information and matching received user identification information with said stored identification information to identify the intended recipient of said information or communication and to identify its sender.
23. A television including apparatus according to any preceding claim.
24. A television as claimed in claim 23, comprising an input to which said apparatus is connected.
25. A television as claimed in claim 23 or claim 24, further comprising an output connected to a communication line for transmitting a datastream or electronic communication.
26. A television as claimed in claim 25, wherein said apparatus comprises means for creating information or a message and means for transmitting said information or message to said communication line.
27. Apparatus as claimed in any one of claims 1 to 22, comprising means for connecting to the internet.
28. Apparatus as claimed in claim 27 comprising means for checking the internet periodically for information or communications intended for the user, said display means being arranged to display said information or communications or a portion of said communication or information, or to display an indication to the user that information or a communication is being stored.
29. A television including apparatus according to any one of claims 27 to 28.

30. A television according to any preceding claim, wherein said information or communication is displayed on the television screen as text.
31. Apparatus substantially as herein described with reference to the accompanying drawings.
32. A television including apparatus substantially as herein described with reference to the accompanying drawings.



Application No: GB 9724178.0
Claims searched: 1-32

Examiner: John Coules
Date of search: 20 January 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.P): H4F FAAX,FBB,FBA,FDX
Int CI (Ed.6): H04N 1/00,5/445,5/45,7/00; H04M 11/08
Other: Online: WPI,INSPEC

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0762751 A2 (Hitachi)	1,2,4,7 and 8 at least
X	EP 0760568 A1 (International Computers)	-
X	WO 96/37996 A1 (British Sky Broadcasting)	-
X	WO 93/01685 A1 (Southwestern Bell)	-
X	WO 93/07713 A1 (Viscorp)	-
X	US 5404393 (Viscorp)	-

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

FUNCTIONAL BLOCK DIAGRAM

EMAIL HANDLING UNIT

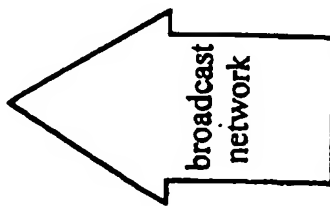
Functions

- holds IDs: User (fixed) multiple groups
- select i/c email messages with matching User ID
- decrypt selected messages
- text editor
- modem
- modulator - TV UHF o/p or scart
- memory to hold messages
- functions controller (eg create, delete, read send messages etc)
- functions flash upgradable (broadcast over air)
- message filter
- mail on demand mode

Keyboard

TV SIGNAL

broadcast
email receive



10

22

telephone line

12

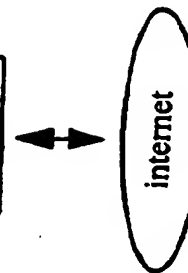


television

1/5

24

internet
gateway



20

email + User ID
encrypted

ENCODING UNIT

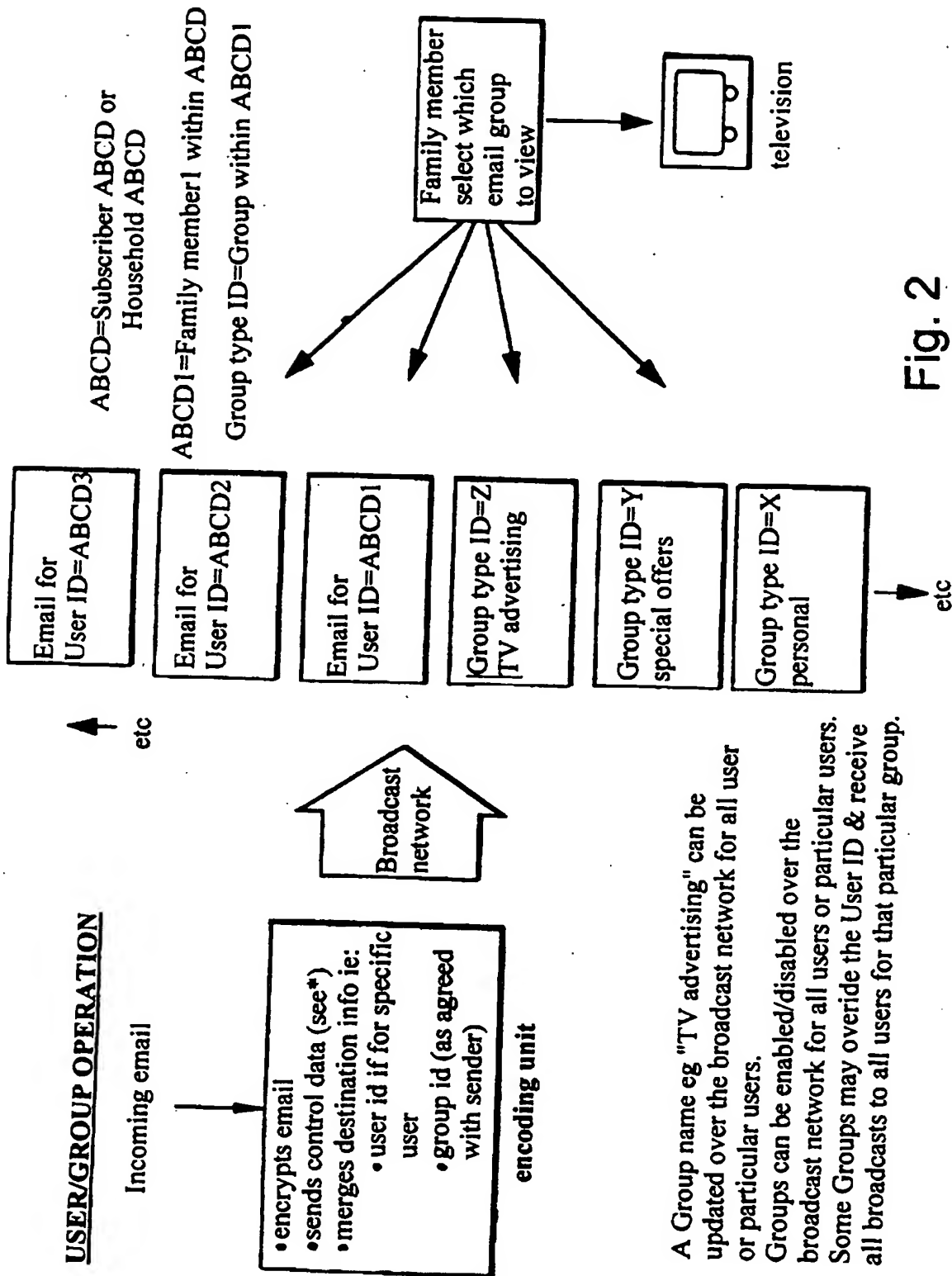
broadcast
email send

email
server

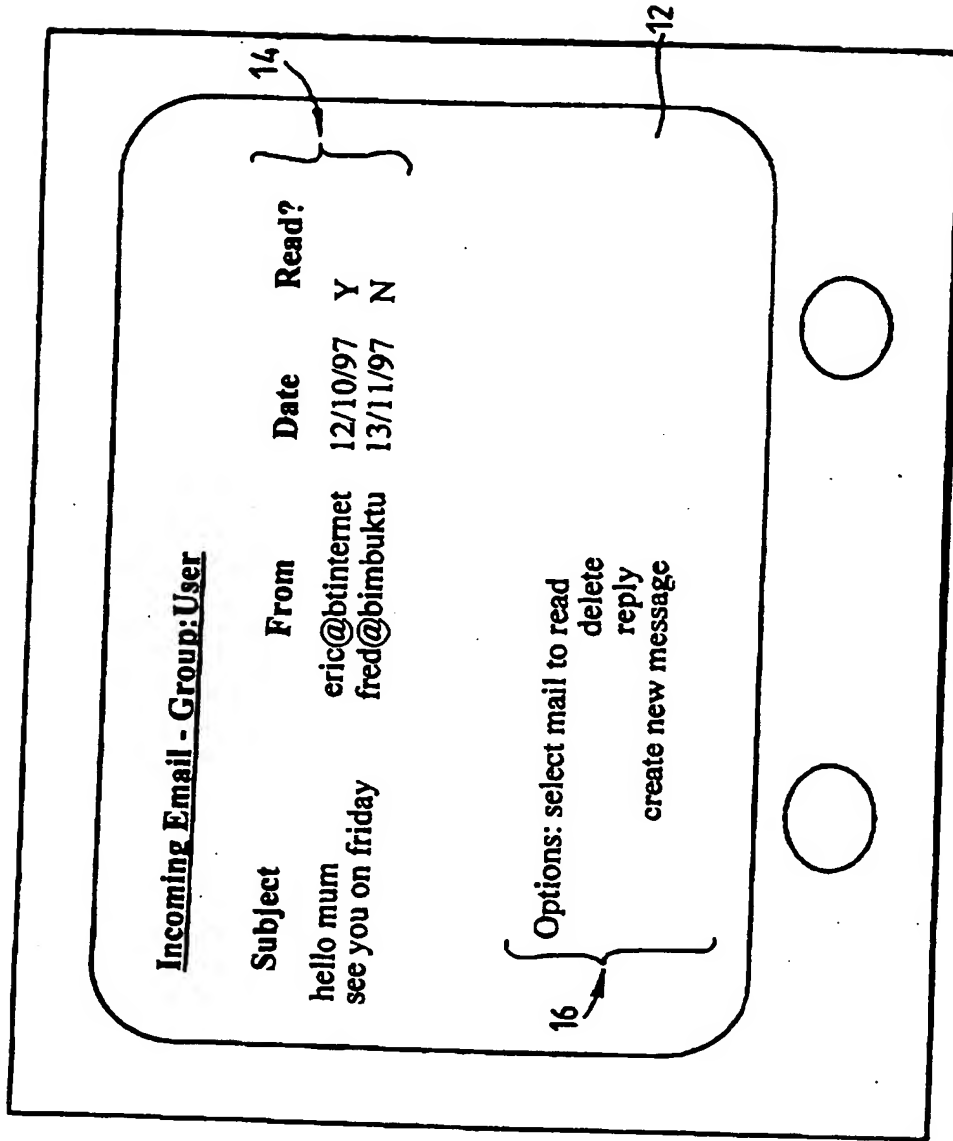
18

email
postoffice

Fig. 1



TYPICAL TV SCREEN MENU



television

Fig. 3

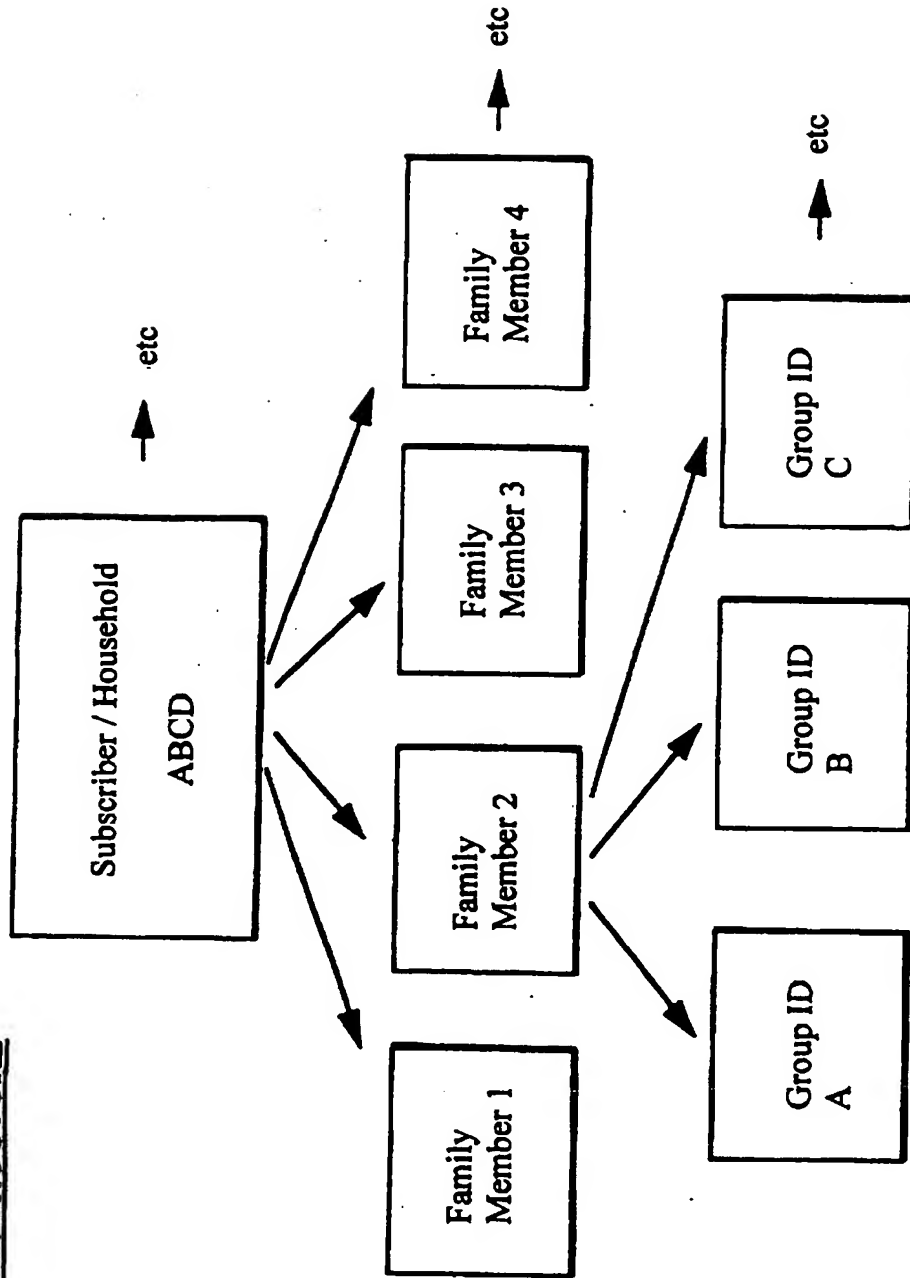
DATA STRUCTURE

Fig. 4

FUNCTIONAL BLOCK DIAGRAM

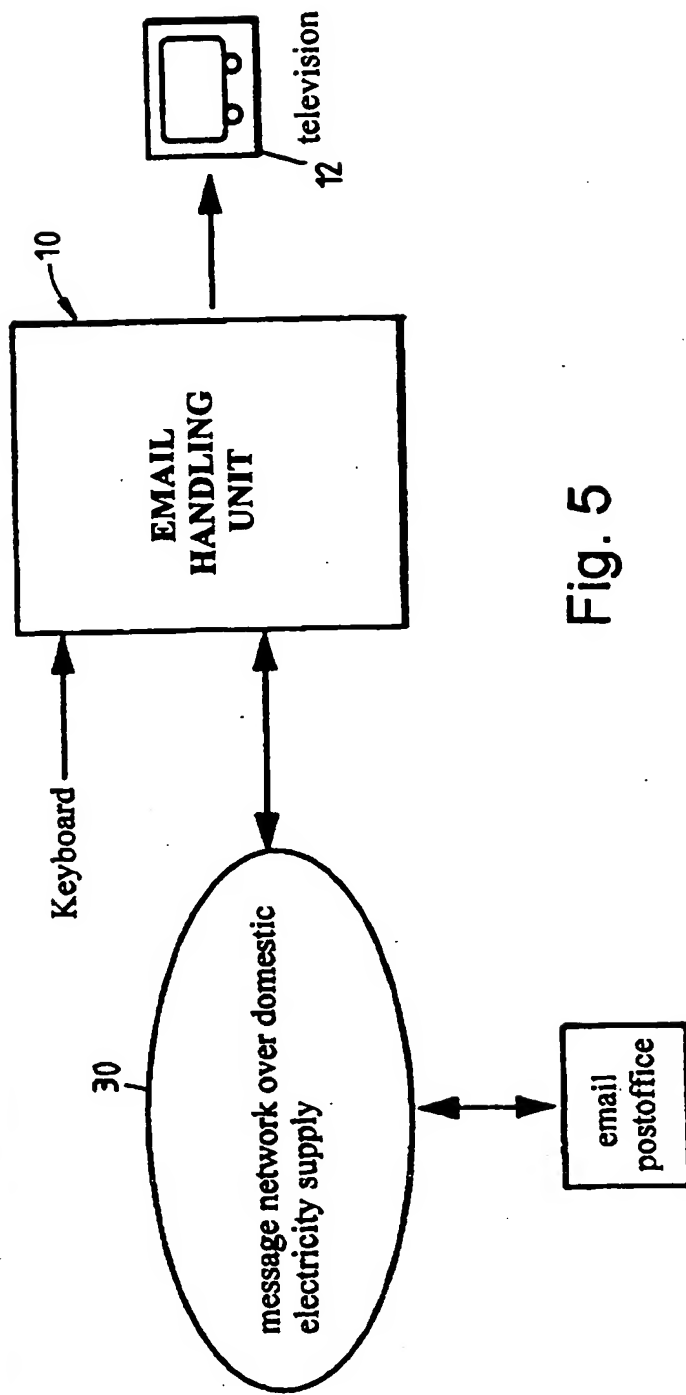


Fig. 5